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Worldwide Report

EPIDEMIOLOGY

No. 226



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ANGOLA

BRIEFS

YELLOW FEVER VACCINATION CAMPAIGN--The Ministry of Health in Luanda has announced that as of yesterday, a campaign of vaccination against yellow fever has been initiated for all individuals between 1 and 15 years of age. Beginning on 9 March until 15 March the campaign will be extended to individuals older than 15. [Excerpt] [Luanda JORNAL DE ANGOLA in Portuguese 4 Mar 81 p 2]

CSO: 5400

BANGLADESH

BRIEFS

MYSTERIOUS DISEASE--Islamabad, March 20--A mysterious disease sweeping through Bangladesh's southern Patakhali district, about 250 kilometres from Dacca, has claimed the lives of over hundred children. According to reports reaching here, the children died within a space of hours after fits of vomiting and a drop in temperature. Local doctors have failed to identify the illness. [Text]
[Karachi DAWN in English 21 Mar 81 p 14]

CSO: 5400

POLIO, YELLOW FEVER VACCINES ORDERED BY HEALTH MINISTER

La Paz EL DIARIO in Spanish 21 Feb 81 p 5

[Text] The Ministry of Social Security and Public Health has ordered vaccines against poliomyelitis, measles, diphtheria and tetanus to improve epidemiological measures to safeguard health.

The chief of epidemiology, Dr Mario Lagrava, said that this order is included in the program of activities which must be developed during the current administration to achieve a greater percentage of contagious disease prevention among the children of La Paz.

In addition, he explained that Frigate Capt Avelino Rivero, minister of health, has given instructions for facilitating control of the "cold chain" system through the installation of freezers for preserving the serums. This program is under control of the Expanded Immunization Program.

He also said that the Department of Epidemiology is developing educational programs for personnel in charge of immunization so that results may be doubled in 1980-81.

Yellow Fever Vaccine

He also reported that during the next few weeks a 100,000-dose shipment of yellow fever vaccine purchased from laboratories in Colombia will arrive at the ministry to help combat the aggressive spread of this disease.

It is proposed to attack the tropical regions, some sectors of which have been affected by the reappearance of the transmitting mosquito. The sectors affected are in Santa Cruz, Cochabamba, Yungas de La Paz and other warm areas.

8735

CSO: 5400

HEALTH OFFICIALS PREPARE FOR POSSIBLE POLIO EPIDEMIC

La Paz PRESENCIA in Spanish 10 Mar 81 p 9

[Text] Past experience indicates that 1981 could be an epidemic year for poliomyelitis, given the fact that this disease occurs with greater intensity every 2 years, sources in the ministry of Social Security and Public Health said yesterday.

Dr Roberto Vargas, national chief of immunizations, explained to PRESENCIA that one of the goals to be achieved within the Expanded Immunization Program (PAI) is the immunization of at least 50 percent of the population, since 100 percent vaccination "is a task which for now is practically impossible." He said that fortunately the necessary amount of vaccine is available. Thus about 1 million doses are needed of DPT (diphtheria, whooping cough and tetanus) and of polio or Sabin vaccine. Another 260,000 doses are needed for measles.

To achieve these goals, the PAI already has adequate equipment and instruments and is now directing its efforts to training competent personnel. Nearly 80 technicians were trained in three seminars held in Oruro, Tupiza and Trinidad (to take care of the north, central and southern zones of the country). These technicians will later pass their knowledge on to others, until the required 1,200 technicians have been trained. The entire program is financed with funds from PL-480, Chapter III (United States law) and other funds donated by the South La Paz Rotary Club.

The PAI began in our country in 1979 with a national seminar whose goal at that time was to train the first human resources. However, the PAI itself originated in 1971 in Santiago, Chile, when the governments of the American continent resolved to support the immunizations program. Thus the 1971-1980 campaign was carried out with special emphasis on the control of contagious diseases.

Until last year Bolivia had no "cold chain" (for the preservation of biological substances), and experimental work was being done in 11 areas of the country. The results of that experience were positive, and the conclusion was that PAI was more successful.

At the end of 1980 the refrigeration equipment began to arrive, consisting of eight 525-liter freezers (electric), ten 255-liter gas freezers, 300 1.3-cubic-foot refrigerators, 120 10-cubic-foot refrigerators, 1,000 refrigerator thermometers, 500 chemical thermometers, large bottles, vacuum flasks, isothermic containers and thousands of needles and syringes. According to Dr Vargas, that material, because of its quantity and quality, can vaccinate 80 percent of the population.

Factors for Good Vaccination Coverage

However, he explained that good vaccination coverage depends on two important factors: that the vaccine does not run out (we have had a sufficient supply since last year) and, second, on the existing demand. This latter is a direct result of the education and distribution campaigns. He added that for this reason the ministry is implementing educational programs through the communications media and fliers which are being distributed in urban and rural areas.

8735

CSO: 5400

YELLOW FEVER MOSQUITO DISCOVERED ONLY IN SANTA CRUZ

La Paz HOY in Spanish 7 Mar 81 p 4

[Text] An entomological survey in cities and provinces of Oriente and Tarija has confirmed that the mosquito which carries urban yellow fever is present only in Santa Cruz.

This disease appeared in the capital of Santa Cruz after having been virtually eradicated for many years. All the sanitary control programs have been directed toward jungle yellow fever, which is found in the torrid areas of Cochabamba, Tarija, La Paz and Santa Cruz.

The mosquito which carries urban yellow fever is the subject of an intensive eradication campaign, but there is evidence that it continues to proliferate in the city and provinces of Santa Cruz.

Survey

A report released last night by the Ministry of Health says that the Epidemiology Division of that ministry made an entomological survey in the following cities and regions:

Trinidad, Riberalta, Guayaramerin and Cachuela Esperanza, in the department of Beni; Cobiya and Porvenir, department of Pando; San Jose De Chiquitos, Robore, Puerto Suarez, Quijarro, San Ignacio de Velasco and Camiri, department of Santa Cruz; and Yacuiba and Boyuibe, department of Tarija.

It affirms that "the Aedes Aegypti mosquito, carrier of urban yellow fever, has not been found either in the larvae state nor in the adult state in those sectors, with the exception of Santa Cruz."

In that department, the Aedes was found in the capital and at Cotoca, Kilometer 15, Montero and Warnes.

Procedure

It was also reported that to make the survey, a random sample of 25 percent of the blocks in urban zones was chosen. A search was made within that perimeter for larvae in containers holding water and for adult mosquitos in dark resting places. In addition, the report states, a similar task was carried out in stations, airports and cemeteries.

Proper epidemiological measures will be taken, based on that study, sources said.

BOLIVIA

RABIES VACCINE SHORTAGES REPORTED IN COCHABAMBA

La Paz HOY in Spanish 8 Mar 81 p 6

[Text] There is some concern about lack of vaccine against canine rabies, a disease which is reaching serious proportions in the city of Cochabamba, according to health officials there.

Some persons are in serious danger of dying after having been bitten by hydrophobic dogs because they have not been able to get the necessary treatment to neutralize the effects of the disease.

Dosage

According to prescription by doctors, once a person is diagnosed to have canine rabies, he must receive 14 doses of the serum to produce immunity. In some cases the infected person, for one reason or another, has failed to follow the program. This has allowed the disease to follow its normal course, resulting in death within a short time.

This also could happen if vaccine is not sent from La Paz with the required urgency.

INLASA

The spokesmen indicated that because of the urgency of the case, serum has been requested from the Health Ministry Laboratories (INLASA) located in the Miraflores section of La Paz.

However, to date this has not been received, causing serious concern among doctors who are treating several infected persons.

The case is cited of one entire family (a father and six of his children) which was attacked by a rabid dog. At present they do not have the resources to purchase the vaccine in the pharmacies, where the prices are exorbitant (about 100 pesos for each unit). This family would need 8,400 pesos to buy the amount they need.

It is hoped that part of the amount requested will be sent within the next few hours, so that immunization treatment may be continued.

8775

CSL: 5400

CZECHOSLOVAKIA

BRIEFS

BRATISLAVA INFLUENZA EPIDEMIC--Ailments of the upper respiratory tract spread considerably among the population of our capital [Bratislava] last week. What is involved is mostly influenza, which--in particular--affects adults. In some cases, the influenza is accompanied by other ailments, such as for example inflammation of the lungs. For this reason, the city medical officer has banned hospital visits on the customary visiting days. The ban is in effect as of 13 March. [Excerpt]
[AU180915 Bratislava VECERNIK in Slovak 16 Mar 81 p 4]

CSO: 5400

HEALTH MINISTRY PLANS 5-YEAR ANTIPOLIO CAMPAIGN

Bombay THE TIMES OF INDIA in English 9 Mar 81 p 16

[Text] New Delhi, March 8 (UNI): Sixteen million children will be immunised against polio during the sixth five year plan.

Union health ministry sources said while 1.5 million children would be covered during 1980-81, 2.4 million would be given polio vaccine in 1981-82.

In the three subsequent years, three million, four million and five million children would be covered under this programme.

The sources said the objective was to expand the vaccination services gradually to cover at least 85 per cent of the infants of the country by 1985.

Considering the magnitude of the problem and the severe nature of poliomyelitis, the ministry started the supply of polio vaccines in July 1970 to supplement the efforts being made by the state health authorities to control its incident.

The sources said during the first phase of the programme, the vaccination services would be concentrated in large cities and towns with adequate cold storage arrangements. With the streamlining of the logistics of vaccine storage and distribution, the programme would be expanded to the rural areas in some states and Union territories.

The sources said the main thrust of the programme of polio vaccination would be to cover between 50 and 80 per cent of the children under two years of age residing in selected towns and primary health centres (PHCS) so that the benefits of the immunisation became evident.

Poliomyelitis is an acute viral infection which may leave the child crippled for life. A large majority of children in India acquire antibodies to all three types of polio viruses by the age of five. Most of the paralytic cases occur during the first two or three years.

The sources said the director-general of health services was organising sample surveys to collect baseline data on the incidence of the disease in various states and Union territories. The survey had been completed in Haryana, Punjab, Chandigarh, Uttar Pradesh and Delhi.

The sources said the preliminary analysis of the results of the survey completed in Punjab and Haryana showed that the annual incidence rate of poliomyelitis in children under five years varied from 2.3 to 4.86 per 1,000 children in rural areas and between 0.67 and 2.77 per 1,000 in the urban areas.

Based on the incidence rates, the survey revealed that out of about 100 million children under five, 100,000 to 448,000 children develop poliomyelitis every year.

The survey further said that most cases occur between one and two years of age but some were also reported in children under one.

CSO: 5400

INDIA

BRIEFS

VIRAL ENCEPHALITIS DEATHS--Tirunelveli, Feb. 19--Viral encephalitis (brain fever) has claimed the lives of 11 children all below ten years. A doctor in the Paediatrics Department of the local Medical College Hospital said that about 25 cases of suspected viral encephalitis were now being treated in the hospital and on an average one case was admitted every two or three days during the past few weeks. [Text] [Madras THE HINDU in English 20 Feb 81 p 9]

CSO: 5400

BRIEFS

MEASLES IN CENTRAL JAVA--Morbili (measles), which not long ago attacked Banyumas Regency especially areas flooded recently, now appears to have attacked several villages in Purbalingga Regency. The latest news is that six children died of the disease in January. Measles is known to have raged through Condong village, Karanganyar Subdistrict, Purbalingga Regency, Central Java. Generally those attacked by the disease were children 5 years of age. The afflicted children initially appeared weak and a red rash developed later on their cheeks and bodies. Not long after this, the children died. The family of Kasmadi (38 years old), a resident of Condong village, recounted that two of their children had measles at the same time and both succumbed to their fate. Initially the Kasmadi family did not question why the children seemed listless and weak. These symptoms later were accompanied by a cough and a high fever. Several days later the rash appeared on their cheeks and bodies. The children were not taken to the People's Health Center but were only given the ordinary medications available in the village. The two children finally died. An even more drastic fate struck the Yatin family. The pitiful child suddenly became ill with a fever and cough. A rash then broke out. Ordinarily if a child is healthy, there is hope that it can be cured after the rash appears. But other things happened to the Yatin child. The appearance of the rash was followed by the loss of its teeth; they fell out, one by one, until all were gone. The child then died. The Yatin family admitted they could not take the child to the People's Health Center or to a doctor because they lived too far away. [Excerpt] [Jakarta PELITA in Indonesian 11 Feb 81 p 3]

GASTROENTERITIS IN WEST SUMATRA--The gastroenteritis epidemic now spreading through Sungai Beramas and Kinali villages in Pasaman Regency has taken 15 lives. According to information received by SINAR HARAPAN, the families of those who died of the disease delayed too long in taking them to the People's Health Center or to a treatment clinic. Dr Anwarsyah, chief of the P3M [prevention and control of contagious diseases] Section of the West Sumatra Department of Health, confirmed that it was gastroenteritis that swept through these two villages. To prevent further spread of the disease, the West Sumatra Department of Health regional office sent a health team to Sungai Beramas and Kinali villages on Tuesday, 3 February. The team brought in medications including tetracycline, Ringer (infusion solution), Oralit, Lysol, Baforit, and other medications. In response to SINAR HARAPAN's questioning, Anwarsyah denied that the individuals died because the People's Health Center and treatment clinics lacked proper medications. Medications were available, but because so many were afflicted, the medications temporarily ran low. This made it necessary to give them only to critically ill patients until a new supply arrived. Anwarsyah said the disease began to spread through Sungai Beramas and Kinali villages in mid-January. [Excerpts] [Jakarta SINAR HARAPAN in Indonesian 6 Feb 81 p 3]

BRIEFS

DECLINE IN ENCEPHALITIS INCIDENCE--There has been a reduction in sleeping sickness in Lambwe Valley, Mbita, South Nyanza, after aerial sprays, to kill tse-tse flies. The chief of Owasí, Mr Thomas Okanga' said wananchi were grateful to the Government because the tse-tse fly menace had reduced tremendously after the insecticide spray. Blood tests conducted by the medical team from Homa Bay District Hospital had proved that the number of sleeping sickness cases had been greatly reduced, Mr Okanga said. He appealed to the Government to deploy hand spray teams in areas which could not be sprayed by air. He said small valleys between hills and forested areas could not be easily sprayed by plane. The Mbita DO, Mr B. Thuku, said if such spraying was done twice in three months, the menace would be eradicated. [Text] [Nairobi DAILY NATION in English 17 Mar 81 p 8]

CHOLERA OUTBREAK--Reports from Eastern Province say that the deadly cholera disease has broken out in Loiyangalani area of Marsabit District. Public health officials and other medical personnel have already been sent to the area to help contain the situation. Unconfirmed reports say at least five people have died and many others hospitalized. [Text] [LD270608 Nairobi Domestic Service in English 1600 GMT 25 Mar 81 EA/LD]

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BRIEFS

EXPANDED HOSPITAL PROJECTS--The General People's Committee for Health said that the previous fifth transformation plan for the public sector aimed at building and operating 29 new hospitals, in various parts of the Jamahiriya. Among these were hospitals with 200 beds capacity in each of the following cities of the Jamahiriya: Sabratha, Misrata, Tarhouna, Al-Zahra and Ben Ghasheer, in addition to 12 hospitals with 120 beds capacity in each of the following: Bani Walid, Mazdeh, Brak, Awbaree, Mirzak, Sarman, Ul-U'Jailat, Al-jamil, Ghdamas, Hawn, Ghat, Nalout and a sanatorium for the mentally handicapped at Swanee with a 1,400-bed capacity. The sources pointed out that Sirte hospital with a 200 beds capacity, will be supplied with the necessary medical equipment for its official opening early this year. The same sources also pointed out that a contract has been concluded to build and operate a hospital for accident surgery in Tripoli with a 500 beds capacity. The sources also added that the technical administration is currently preparing feasibility studies for 2 T. B. hospitals, one to be located in Tripoli, with a 400 beds capacity, and a mental hospital in Tripoli, with 1,200 beds. [Text] [Valletta THE JAMAHIRIYA MAIL in English 7 Mar 81 p 9]

CSO: 3400

FIGHT AGAINST RECURRING CHOLERA CASES CONTINUES

Beira Campaign

Maputo NOTICIAS in Portuguese 12 Mar 81 p 3

[Excerpts] Beira--An intensive mass chemoprophylaxis campaign with sufadoxia or "fanazil," as a part of the fight against cholera, will be carried out next Saturday, 14 March, in the city of Beira. The operation will cover the areas most affected by this epidemic outbreak and will last 24 hours.

On that day, starting at 0600 hours, several teams will go from house to house distributing "fanazil" pills to the residents. It will thus be necessary for all those involved to stay in their homes, to make possible greater efficiency and control of coverage on the part of the distributing agents.

The chemoprophylaxis campaign with sufadoxia is being carried out for the first time in this region of the country.

In the city of Beira in particular, the campaign arises from the fact that this is a region where health conditions are extremely precarious (for lack of sanitation in the area), in an attempt to break a whole cycle of transmission of diseases--or at least succeed in drastically reducing their active centers--caused by vibrios.

Over 1,500 persons, including students, soldiers, teachers, and employees of certain firms, in addition to the personnel of the National Health Service, will be involved in this great anticholera campaign.

Countrywide Statistics

Maputo NOTICIAS in Portuguese 13 Mar 81 p 5

[Excerpts] For more than a week no positive case of cholera has appeared at the Hospital de Benfica or at the HCM [Central Hospital of Mozambique?]. In Nampula the appearance of new cases of this disease was registered 3 weeks ago, the situation having been under control since 25 February. However, the same cannot be said of Beira, where every effort is being made to control the outbreak of this disease.

This information was given out yesterday by Jorge Cabral, national director of preventive medicine, at a press conference granted to the national information

media. The meeting was for the purpose of bringing them up to date on the situation in the development of the fight against the outbreak of cholera during the last half of February and the first week of March.

As the official confirmed, during the period between 15 February and 5 March 162 cases of cholera were confirmed in the city of Beira, with 21 resulting deaths. In addition, during the same period another localized center showed up in Mafambisse, in the province of Sofala, where 32 cases of the disease were confirmed, with 4 deaths.

However, in Nampula the cholera outbreak is now restricted to an area between Namatite in the Monapo district and Mepuhula in Nacala-a-Velha.

From the beginning of February to the present, according to the statements of the national director of preventive medicine, this outbreak has resulted in 42 cases of cholera, 8 of which were of fatal outcome. It should be emphasized that this center is now under the control of the health agencies and that no more cases of this epidemic disease have been verified since 25 February.

As we mentioned in the beginning, in the capital of the country the outbreak of cholera is now in a situation that can be considered as effective control.

Jorge Cabral told the national media that the center in the Avenida do Trabalho has been overcome, the confirmed cases having decreased progressively from 15 February to the end of that month. The same can be said of the scattered cases from other parts of the city of Maputo.

From 15 February through the first week of March, however, 17 cases of cholera were reported in the infirmary of the HCM and 33 confirmed cases in the Hospital do Benfica. In connection with the former there were three deaths, but none have been reported in connection with the others.

Efforts To Control Cholera in Beira

"At this moment great efforts are being made to control the situation in the city of Beira, where the main center of the disease is localized," the national director of preventive medicine said during the meeting held with the media, and he also made known the fact that 170,000 persons living in that city have been vaccinated.

The official also revealed that an intensive mass chemoprophylaxis campaign will be carried out tomorrow [14 March] in the Munhava quarter, in an attempt to sterilize the main source of contamination with this disease.

"In the Munhava quarter the contamination level had risen because of the rains that had flooded the ground, making the sanitary conditions very bad, especially with regard to removal of human excrement from the flooded latrines," said Director Jorge Cabral, referring to the principal factors in the origin of this disease, especially in the suburban districts.

As we said in our last number, the chemoprophylactic campaign with sulfadoxia represents the application of measures strongly recommended by the World Health Organization (WHO).

To guarantee the success of the campaign, the director of preventive medicine emphasized, we were furnished with all the material resources necessary with a view to preventing this disease from spreading to neighboring districts.

Vigilance Continues at Health Posts

"The fact that in the city of Maputo, for example, not a single case of cholera is registered at this moment does not mean that the fight against this disease has ended. In all of the health units vigilance is sharp and the concern to detect possible cases that may arise is continuing," Director Jorge Cabral stated during the press conference for the information media.

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CSO: 5400

BRIEFS

TETANUS VACCINATIONS--More than 7,000 persons will be vaccinated this year against tetanus in the district of Nampula in furtherance of the national vaccination campaign taking place in the country. This campaign, which has already started in the city of Nampula, includes hundreds of children up to 5 years of age, who have been vaccinated against whooping cough, tuberculosis, and measles, and have received the first dose of the vaccination against infantile paralysis. A member of the preventive medicine team now working in Nampula stated that pregnant women will also be included in the campaign, but will only receive the first and second doses of the tetanus vaccine. [Excerpt] [Beira NOTICIAS DA BEIRA in Portuguese 6 Mar 81 p 2]

CSO: 5400

BRIEFS

CHOLERA AFFECTS 546 PERSONS--A total of 546 persons have been affected by cholera reported in the Delta area of Bendel State. Out of this number, 13 of the victims who were admitted in government hospitals in the area lost their lives. This was the official report on the outbreak of cholera in Ughelli and Warri Local Government areas released in Benin City by the state Commissioner for Health, Dr Titus Ohikhena. The commissioner did not, however, give details of the effect of the killer disease in Bomadi and Burutu Local Government areas which are hard-hit. He said that everything was being done to curtail the disease. Dr Ohikhena disclosed that drugs and vaccines worth about 45,000 Naira had been spent so far in fighting the disease in the affected areas. He added that about 7,000 persons had been inoculated against the disease in the areas. On the spread of the disease, the commissioner noted that the overall sanitation in the affected areas was such that an epidemic could easily spread once a good proportion of the inhabitants contacted the disease. Dr Ohikhena advised people in the areas to obey simple rules of hygiene and to take advantage of the massive inoculation already going on to prevent the disease. The commissioner also spoke of another form of cholera called gastro-enteritis which, he said, occurred in the affected areas some time this year. [Text] [Kaduna NEW NIGERIAN in English 17 Mar 81 p 16]

CSO: 5400

SHARP DECLINE IN PAKISTAN TB CASES

Karachi DAWN in English 28 Mar 81 p 8

[Article by Hamdan Amjad Ali]

[Text] The incidence of tuberculosis in Pakistan has declined almost by half-- from 4.6 per cent in 1964 to 2.04 per cent in 1980--a research study showed.

According to a survey, about 15 lakh persons are suffering from TB in this country. About two lakh fall victim to this disease every year.

The research study conducted by Syed Amjad Ali Jafri, a researcher and Health Educator, Dow Medical College, indicated that in Pakistan suffers a huge loss of money annually because of this disease.

Explaining the position, Mr. Jafri told DAWN that 63,708 persons die of TB every year and each one of them could have earned at least Rs.2,000 annually on an average during his productive span of life. The annual loss thus comes to Rs.120 million per year.

He further said that 15 lakh TB patients who remain more or less idle or under-employed owing to various social reasons, cause a loss of Rs.27.6 million to the economy.

Elaborating he said the amount spent on the sustenance of a person from his birth to 25 years was calculated at the rate of Rs.15,000 per head. This means that out of 63,708 dead, the deaths of the adult persons cause an annual loss of Rs.902 million.

He said there were hardly 175 TB Specialists in the country and most of them were available only in cities. There are 18,000 doctors--90 per cent of whom are stationed in 10 major cities where 16 medical colleges are located. The rural areas are, by and large, without any TB Specialists, he said.

He also disclosed that Pakistan trains about 4,000 physicians every year in hospital-oriented advanced curative technology. Out of them, hardly 500 get public jobs while the rest either go abroad for better opportunities or settle down in the urban areas.

He regretted that over 900 medical assistants and Medex who were specially trained to bring about a change in the health behaviour of the people through latest educational techniques are not being fully utilised.

He strongly advocated employment of mid-level health workers till such time that the economy, means of communications, educational facilities and social environment improve to encourage the doctors to serve the villages. He also suggested that after a brief in-service training, the school teachers could be deployed for group health education.

To combat TB he suggested that the "verticality in TB control" be abandoned immediately and instead, there should be an integrated approach along with MCH, nutrition, family health and environment health, motivation, etc.

The research study pointed out that irrespective of the economic status of various communities in Karachi, out of the total number of TB patients in any one of these only 10 per cent needed special attention of the physicians/chest specialists. And out of the 10 per cent, only a little more than three per cent needed hospitalisation.

There are 4,100 TB beds in Pakistan. The number of unproductive TB patients (bed-ridden patients, patients in convalescence plus physically weak plus victim of social stigma or under-employed TV patients) is double the number of three per cent needing hospitalisation which comes to 9,200.

In some districts TB beds are lying vacant as hospitals do not find TV patients. In Thatta district, for example, there are 35 beds in the hospital and on an average, only five beds remain occupied during the year.

CSO: 5400

BRIEFS

35,000 LEPROSY PATIENTS--There are about 35,000 leprosy patients in Pakistan settled in all parts of the country. According to a survey, of the total patients 25,000 are registered with Marie Adelaide Leprosy Centre, which has branches all over the country. The majority of the patients of this disease live in big cities like Karachi, Hyderabad, Lahore, Rawalpindi and rural areas of northern region and Baluchistan. The survey states that the disease is migratory in nature and has been transferred to these areas of the country from other parts of India. The survey indicates that the notion that the disease prevails among the poor only is wrong, because it has been detected in all classes of the society alike.--PPI [Text] [Karachi DAWN in English 21 Mar 81 p 12]

MOSQUITO MENACE--With the arrival of spring the menace of mosquitoes has increased disproportionately in and around the city. A vast majority of the public are troubled at night when bitten by this insect. So many so that borrowing a few many families have become malarial victims. [as published] Every year, the Lahore Municipal Corporation prepares a crash programme to eliminate this insect once and for all. But experience shows that such commitments were never translated into reality and in future perhaps no tangible improvement can be expected. In this regard, it is not out of place to mention here that if insecticides are sprayed only some privileged are obliged while the resourceless are ever neglected. The sum and substance of spraying should be that all areas irrespective of any distinction should be sprayed on fortnightly basis. If this state of affairs remains unresolved, the atmosphere will be polluted further and thus cause more epidemic diseases. For this more emphasis should be put on sanitary conditions which are in a bad shape since long. I therefore, request the Mayor, LMC to issue instructions to the Health Officer to start in insecticide spraying zone-wise, without any loss of time in the mass interest. [Mohammad Afzal Khan] [Text] [Lahore THE PAKISTAN TIMES in English 12 Mar 81 p 3]

CSO: 5400

STUDY SHOWS RELATIONSHIP OF CANCER TO ENVIRONMENT

Shanghai ZIRAN ZAZHI [NATURE JOURNAL] in Chinese Vol 3, No 2, Feb 80 pp 126-129

[Article by Pang Rukang (2435 1172 1660) of the Office of Environmental Geography Research, Shanghai Teachers University]

[Text] Following the conquest over smallpox and tuberculosis, which had been regarded as incurable diseases, since the sixties in the 20th century, malignant tumor--cancer--has become one of the most serious diseases damaging the health of mankind.

In the past decade, men have been continuously searching for the pathogenesis of cancer. Today many researchers believe 80-90 percent of the cancer in mankind is induced by environmental factors. Some even believe that "almost all carcinomas appear to be induced by the environment."¹ While at present there is some tendency to think that the occurrence of cancer is related to industrial pollution, in many regions carcinomas appear to be unrelated to industrial pollution. They seem to be related to the local geographical environment. This fact cannot fail to attract people's attention to the study of the relationship between the geographical environment and cancer.

I. Some Facts Deserving Attention

The most basic characteristics of the geographical environment are its structural uniformity, the zonal property of its spatial distribution, and the periodic property with respect to time. These characteristics affect the lives and livelihood of mankind at all times. The relationship between the geographical environment and people's health was recognized very early, but a relatively profound understanding of the close relationship between some endemic diseases and cancer and the geographical environment is a matter of the past 10 or more years. This understanding is primarily caused by the discovery of the following valuable facts:

1. The contents of chemical elements in man's blood correspond to those in earth's crust.

It has long been known that the human body contains various elements. If all the elements in a person's body are weighed, we discover that the 11 elements oxygen, carbon, hydrogen, nitrogen, calcium, sulfur, phosphorus, sodium, potassium, chlorine, and magnesium amount to more than 99.9 percent of the total weight of the human body. Although the content of other elements is very

small, their function is extremely important because these trace elements are often the constituent elements of hormones, enzymes, and vitamins, which have great significance in the biochemical function of the living process of the organic body.

In the seventies a precise and correct determination of the content of chemical elements in the human body was made. The result disclosed for the first time that the average content of many chemical elements in the human body has an obvious uniformity with their average content in the earth's crust.² (see Figure 1)

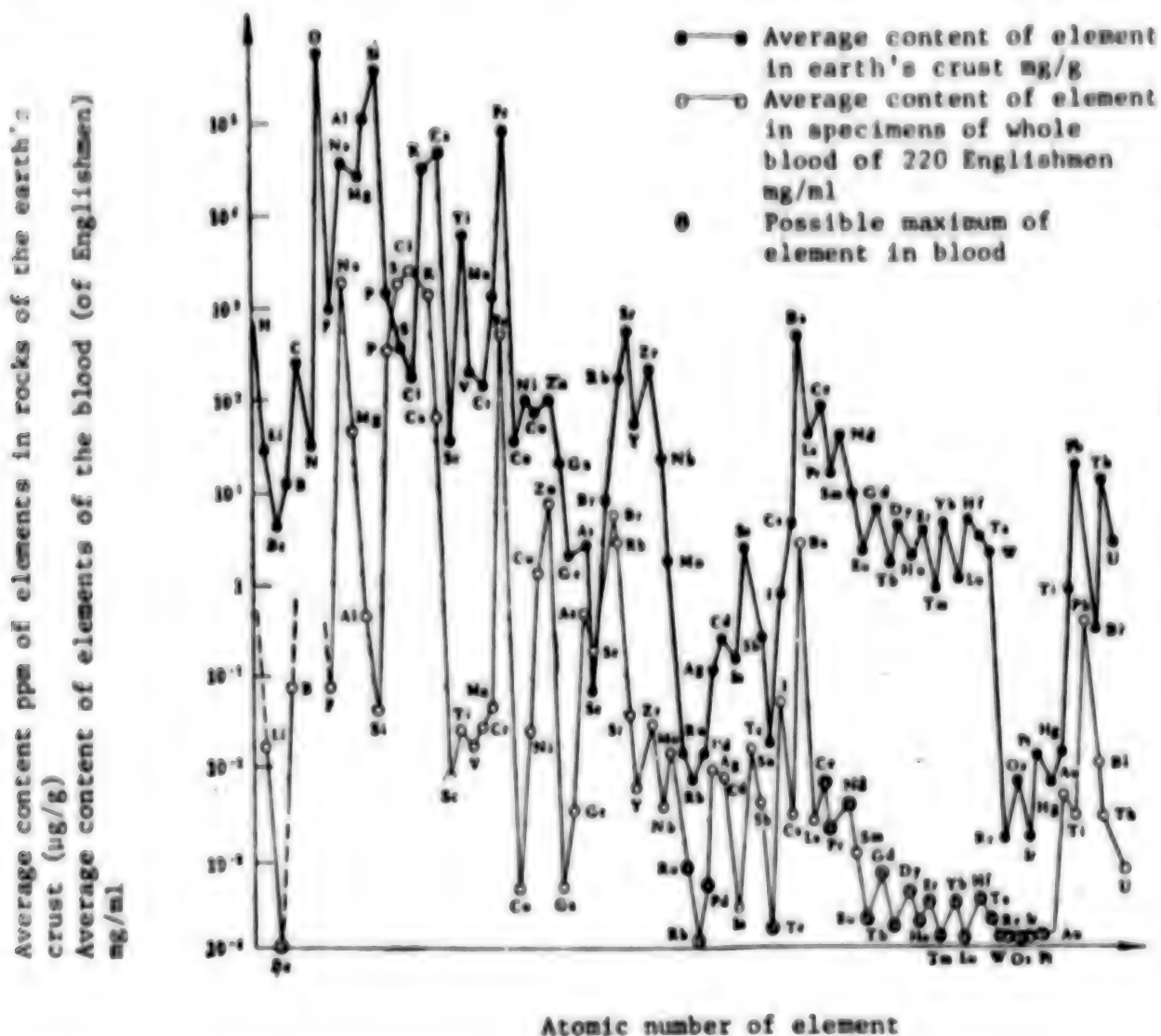


Figure 1. Obvious Correspondence of Rare Element Contents of Human Blood and the Earth's Crust

This fact clearly indicates that life and the geographical environment form an organically linked unity.

2. The distribution of chemical elements in human tissue is obviously selective.

In the human body, the various chemical elements are concentrated in the respective organs and tissues to take up important functional burdens of living. For example, the elements calcium, phosphorus, etc are the major constituents of the skeletal bones; iron, cobalt, etc are the major components of blood; manganese, molybdenum, copper, and zinc are the important components of many types of oxidation enzymes, and so on. The activities of these elements bring men close together with their surrounding environment.

Most recently, another discovery was made. The distribution of chemical elements in the various tissues of the human body is obviously selective. That is to say, some elements are particularly easily absorbed and concentrated in some tissues.

For example: in brain tissue--cadmium, strontium, bromine, aluminum, etc.
in kidney tissue--bismuth, lead, cadmium, selenium, arsenic, silicon etc.
in liver tissue--lead, iodine, samarium, selenium, arsenic, zinc, copper, etc.
in lung tissue--antimony, tin, selenium, chromium, aluminum, etc.
in lymph tissue--uranium, terbium, antimony, manganese, lithium, etc.

These facts not only demonstrate the intimate association between the human body and the environment, but also reveal the possibility that a deficiency or excess of certain elements in the environment surrounding us may induce a disorder in the tissue of a certain organ.

3. The lack of uniformity of distribution of chemical elements in the earth's crust.

The relationship between chemical elements and the human body is as intimate as that, and yet the distribution of the various chemical elements in the earth's crust is not even. It is already understood that the chemical components of water, soil, and even the air are not entirely the same in the mountains and the plains, or inland and on the coast. Furthermore, even in two mountainous areas the content of chemical elements of different parent rocks is not the same. For example, cobalt, nickel, chromium, zinc, boron, etc exist in relatively large quantities in basic igneous rocks; barium, zirconium, lanthanum, etc exist in relatively large quantities in acid igneous rocks; while the distribution of manganese, strontium, etc is relatively even. The content of an individual element in different rocks is also different. To use molybdenum as an example, its content in ultrabasic rocks is 2 ppm; in basic rocks, 14 ppm; in neutral rocks, 9 ppm; in acid rocks, 10 ppm; and in sedimentary rocks as high as 20 ppm. Through water, soil, air, animals, and plants, the effect of this kind of unevenness may possibly create deficiency (insufficient) or excess (toxic) of certain elements needed by the human body in groups of persons of different regions.

4. Regional difference of distribution of some cancerous diseases.

Through surveys and studies of the past 10 or more years, it has been discovered that some cancerous diseases, especially cancers of the digestive system, have obvious regional differences.

In the United States, the high-incidence regions of cancer are distributed mainly in the Northeast, the areas surrounding the five Great Lakes, and the coastal region of the South.⁴ In view of current analyses, this type of difference is not only related to the primary environment (such as the high incidence of skin cancer in the southern region of intense light exposure), but also to the secondary environment. The excessive mortality rate of several cancerous diseases (mouth, throat, esophagus, urinary bladder, etc) is concentrated in the Northeast, an area of high industrialization, and is limited to males. This fact indicates a possible relationship to occupation. For example, industrial pollution of the environment has induced obvious geographical groups of male urinary bladder cancer.

For the purpose of looking for the pathogenesis of cancer, researchers of related sciences in China have gone to regions of high incidence of cancer in recent years to carry out on-site observation and study, and they discovered that the occurrence of some cancerous diseases also has a definite regional characteristic. For example, esophageal and penial cancers are more numerous in North China, while the incidence of liver and rhinopharyngeal cancer is higher in East, South (especially Jiangsu, Guangdong, and Guangxi) China, and along the seacoast. In the Northeast, Central, and Northwest, gastric cancer is the first among common cancers in males; incidence of gastric cancer is also the highest among cancers in East China (regions of Shanghai, Hangzhou, etc), while among females incidence of gastric cancer is lower than that of cervical and mammary cancers.

This kind of regional difference of cancerous diseases exists worldwide. For example, India has many cases of cancer of the mouth; Israeli women have eight times as many cases of breast cancer as Japanese women; the incidence of gastric cancer is higher in Japan and Iceland; Jews and Muslims have fewer cases of penial cancer; persons of the white race have more cases of prostatic cancer; the Bantus of Africa have a high incidence of liver cancer. Most recently, it was further discovered that the distribution of lymphatic cancer among African children is definitely higher in regions of a certain altitude with relatively plentiful rainfall. This fact may be related to the large numbers of a certain species of mosquitoes. In regions of high incidence of esophageal cancer in Africa, the nitrosamine content of alcoholic beverages is high and they are also contaminated by zinc. The region of high incidence of liver cancer in Africa has a relatively high temperature and that fact is also related to the presence of a certain toxic species of gnats.⁵

Although the precise pathogenesis and mechanism of cancer are not yet completely understood, the large amount of survey and research have proved that as an exogenous factor, the environment is important in the occurrence and development of certain cancerous diseases and it has been given the necessary attention. It is important that this idea comes from the regularity of geographical distribution of some cancerous diseases.

II. Principle of Geographical Distribution of Several Cancerous Diseases

Cancer is a disorder of about 100 obviously different locations. When there is a change in the environment, there will also be changes in the incidences of various types of cancer. The majority of these 100 disorders are rare; therefore, when the geographical distribution of a few of these is clarified, a general condition of the relationship between cancer and the environment may be explained.

In China, there have been considerable studies on the pathogenesis and the geographical distribution of esophageal, rhinopharyngeal, and primary liver cancers. In the last several years, some surveys have also been carried out on gastric and lung cancers. The following is a preliminary investigation of the principle of geographical distribution and environmental pathogenesis of cancers of the digestive tract involving the esophagus, the liver, and the stomach.

1. Esophageal Cancer

The region of high and medium incidence of esophageal cancer in China is mainly the area bordering the three provinces of Henan, Hebei, and Shanxi, i.e. the arc of both slopes of the central and southern sections of the Taixingshan Mountains. Farther away from this arc, the incidence gradually diminishes, to form a distribution of several irregular concentric circles. In relatively obvious regularity, the difference between the highest and the lowest incidence is about 100 fold. In the areas of high incidence, not only is it easy for groups of people to have esophageal cancer, but the animals (chickens and sheep, etc) also easily suffer from esophageal cancer. More importantly, these are high-incidence areas now as well as historically. This matter, therefore, has a historical hereditary characteristic, indicating that carcinogenetic factors perhaps exist in this region in a relatively stable and persistent form.

In Asia, regions of high incidence of esophageal cancer are distributed in a zone extending from the Middle East to Afghanistan, Soviet Central Asia and a portion of Siberia, Mongolia, and the northern part of China. According to international statistical data, the Turkmen region of the USSR has the highest incidence of esophageal cancer, 110.5 cases per 100,000 persons every year. Next comes Transkei Province of South Africa. Incidence is also relatively high in Equatorial Africa, the western part of Kenya, Iran, the northern part of Chile, France, Finland, India, and Sri Lanka. The large number of surveys of recent years on esophageal cancer, the geographical environment, and the life habits of the local people have disclosed that the high incidence of esophageal cancer in Chile and Iran is related to the scanty rainfall and the high salt content of the soil. In the region of high incidence of esophageal cancer in Central Africa, the inhabitants all have the habit of drinking a special beverage which contains nitrosamines. According to general estimates, the daily intake of nitrosamines by the local inhabitants exceeds the safety limit, and animal experiments have proved that nitrosamines can indeed induce esophageal cancer.

Furthermore, inhabitants of many regions of high incidence of esophageal cancer have the habits of drinking alcoholic beverages, smoking, unsatisfactory oral cleanliness, eating hot foods, or chewing betel nuts. These habits have a definite stimulating effect on the esophageal membrane and may perhaps be carcinogenetic.

2. Liver Cancer

Compared with other cancers, the regional characteristics of liver cancer are even more obvious. It is distributed mainly in a zone from the Equator to the vicinity of the warm part of the Temperate Zone and is rare in the cold part of the Temperate Zone and the Frigid Zone. Incidence of liver cancer is higher in Asia and Africa, especially along the Pacific Coast of Asia and the region south of the Sahara Desert in Africa. It is relatively rare in Europe, America, and Oceania. (see Figure 2)



Figure 2. World Distribution of Liver Cancer

A comprehensive study of the data regarding the incidences of liver cancer in the five continents⁶ has been carried out, resulting in the conclusion that the incidence of liver cancer is highest in some countries of Africa. For example, in Maputo in Mozambique, the standardized incidence for people 15-44 years of age is 164.6/10,000 of population, the highest known in the world. In Bulawayo, Zimbabwe, it is 79.2/10,000, or 500-10,000 times that of the United States or Europe. The incidence is also relatively high in Tanzania, Uganda, Ethiopia, Togo, Ghana, Greece, Japan, Singapore, and parts of China. A statistical study of all Southeast Asian countries showed that in that region, incidence of liver cancer is higher among immigrants than among the natives. In many countries, immigrants of Chinese ancestry have a higher incidence than the local inhabitants, while the incidence is higher among those Chinese who have resided there for a short time than those who were born and raised locally. All these facts demonstrate the important effects of environmental factors on the genesis of liver cancer, while the effect of genetic factors is minor. The regions of high incidence in Africa are all distributed in areas of high temperature and humidity. When the United States sold its surplus grain to Africa, due to improper storage and the effects of the weather, conditions were created for the growth of molds. Moreover, the local children often picked up the moldy peanuts from the ground and ate them. All these facts have a definite relationship to liver cancer. In recent years, many species of mold on local grains have been isolated. Among these, the toxin of *Aspergillus flavus* is

especially poisonous to the liver. It can induce liver cancer and also cause liver necrosis. In recent years, Japan has also begun to emphasize research on the carcinogenic action of some fungi that are capable of infecting rice.

In China, cases of primary liver cancer exist in the South as well as in the North, but the incidence is higher in some areas of Guangxi and Jiangsu. A review of survey materials on cases of death due to tumors in China's 16 provinces, cities, autonomous regions, and some districts, municipalities, and counties, shows that the average mortality rate due to liver cancer in China is about 10/10,000 of the population. The general liver cancer distribution characteristics in China are as follows: It is higher in the South than the North. It is higher in the East than the West. It is higher in the Southeastern coast than inland. The incidence of liver cancer is higher in areas of combined natural geographical conditions of warm temperature, high humidity, frequent rainfall, low terrain, a river delta or coastal island, and especially having a serious problem of water pollution.

3. Gastric Cancer

According to statistics, the region of the highest incidence of gastric cancer in the world is Central Asia in the USSR, where it is as high as 140-160/10,000 of population each year. It is also high in some areas of Siberia. According to statistical data on death due to stomach cancer in more than 40 countries, it is 74.4/10,000 for men and 42.3/10,000 for women in the USSR, 68.57/10,000 for men and 35.31/10,000 for women in Japan; 58.43/10,000 for men and 29.02/10,000 for women in Chile. These are relatively the highest. The next highest regions are Finland, Poland, and Austria. Incidence of stomach cancer is also relatively high in the Scandinavian countries. The lowest incidence of stomach cancer is New Zealand (1.31/10,000 for men and 0.70/10,000 for women). It is relatively rare in Africa, North America, India, and Indonesia.

The incidence of gastric cancer is also relatively high in China. In the Northeast, Central China, and the Northwest, it is the most common malignancy among men. In North China the incidence of gastric cancer is second only to esophageal cancer, in Guangdong it is second only to rhinopharyngeal cancer, and in the Nanning District of Guangxi it is second only to liver cancer. The incidence of stomach cancer in East China (Shanghai, Hangzhou, etc) is also the highest among men; among women it is lower than cervical and breast cancer, however.

Within the past half century, the mortality rate of stomach cancer in the United States has been reduced to almost one-eighth what it was previously. According to research studies, it is perhaps related to the fact that the U.S. Government has been strict about food safety and has been careful about inspection and control of food contamination.

III. Investigations Concerning Carcinogenic and Cancer-Inhibiting Factors in the Environment

Although we have not yet found the concrete pathogenesis of various cancers, if cancer can be induced by environmental factors then theoretically it can be completely prevented.

1. The problem of carcinogenesis of trace elements.

Studies have been carried out in different geographical regions to prove that the content level of elements in the environment is related to the incidence of cancer of the digestive tract (esophageal cancer, gastric cancer, and colon cancer), liver cancer, rhinopharyngeal cancer, laryngeal cancer, cancer of the urinary tract, and leukemia or their mortality rates. It was also discovered that the content of these elements is often determined by the geological condition or the parent material of the soil of the environment. As the distribution of elements in the environment is not even, if, just as some endemic diseases (such as the fact that thyrophyoma is known to be caused by iodine deficiency) have been studied, we can find out that cancer at a certain location in a certain geographical region is caused by either a deficiency or an excess of a given element or elements, we can prescribe the proper drug for the disease and put the emphasis on prevention.

In a paper, "Relationship Between the Content of Carcinogenic Trace Metal Elements in City Water of Some Areas of the United States and the Mortality Rate of Cancer," the relationship between the contents of 8 trace elements in the city water of 10 different sources in the United States and the mortality rate of various cancerous diseases of some inhabitants is determined in order to clarify the fact that arsenic is related to the mortality rate of laryngeal cancer, ophthalmic cancer, and leukemia; the beryllium content of water is related to the mortality rate of mouth cancer, laryngeal cancer, and rectal cancer; the cadmium content of water is extremely closely related to the mortality rate of various cancers (especially rectal cancer, esophageal cancer, mouth cancer, and all cancers of the lymph); while the iron, cobalt, and chromium content of water is not related to the cancer mortality rate.

Since 1967, researchers in Finland have begun to notice the relationship between the region of high incidence of stomach cancer and the manganese deficiency of the cropland. This is due to the fact that the deficiency of manganese and selenium (with accompanying deficiency of copper, magnesium, calcium, and phosphorus) causes an imbalance in respiration and metabolism of animal and plant cells. Attention has also been brought to the fact that the regions of high incidence of esophageal cancer are deficient in molybdenum, those of liver cancer have a deficiency of copper and an excess of zinc.

2. The three strong carcinogenic substances in the environment--nitrosamine, *Aspergillus flavus*, and benzopyrene--are considered the three strong carcinogens of the environment, but certain conditions are often required for them to cause cancer.

The density of nitrosamine in nature is often relatively low, but its antecedents, nitrites and secondary amines exist in great quantities in the human environment. Regions of soils with high nitrogen content, excessive nitrates and nitrites (such as saline and alkaline lands), or of excessive applications of nitrate fertilizer in soils deficient in molybdenum or other trace elements will cause the plants and vegetables (especially spinach, celery, and lettuce) to contain too many nitrates, while the content of secondary amines is high in various species of fish and marine products and especially in fish eggs. When these foods are digested, the nitrates may be reduced by microbes into nitrites which, after reacting with secondary amines, form nitrosamines and become carcinogenic.

Temperature, moisture, and humidity are the necessary conditions for producing *Aspergillus flavus*. When the temperature is about 30 degrees Celcius, the relative humidity is above 80 percent, the moisture content of grains is above 40 percent, or the moisture content of peanuts is above 9 percent, the condition most suitable for the propagation and growth of *Aspergillus flavus* is met. When the temperature is at 28-32 degrees Celcius, the quantity of toxin produced by the *Aspergillus flavus* is the highest. For this reason, the work of preventing mold and removing toxin may be said to be necessary to avoid carcinogenesis of *Aspergillus flavus* toxin.

Benzopyrene has been used as a single index of the effect of all atmospheric pollutants of 6.2mg/1,000 cubic meters in the density of benzopyrene will double the mortality rate of lung cancer. Benzopyrene exists in relatively great quantities in atmospheric pollutants and cigarette smoke. It has been proved that the probability of lung cancer is 10-50 times higher among smokers than nonsmokers.

3. Certain cancer-inhibiting factors in the environment.

There has been growing attention to the relationship between the trace element molybdenum and human health. According to reports, a deficiency of molybdenum is closely related to the myocardial disease, Keshan disease, the pathogenesis of which is yet unknown. Molybdenum may also have a cut-off action in the production and accumulation of some carcinogens such as nitrosamines in the environment. If the soil is deficient in molybdenum, the metabolism of crops may be affected. Due to metabolic anomalies, the accumulation of nitrosamines in grains is higher, and metabolic anomalies may also cause such crops as corn to be easily infected by molds (such as *Aspergillus flavus*) which are capable of producing carcinogenic toxins and there will be a high incidence of cancer among the local inhabitants. Molybdenum is also a trace element capable of increasing the yield of many crops such as beans on a large scale. Application of molybdenum fertilizer in soils of molybdenum deficiency can therefore increase the yield of crops as well as prevent certain cancers.

Some reports also indicate that the natural environment (soil, water, and plants) of some regions in the United States, Canada, and New Zealand has plentiful amounts of selenium and the incidence of cancer of the gastrointestinal tract is low among inhabitants of these regions, while the density of serum selenium in victims of gastrointestinal cancer (including those of metastatic cancer of the gastrointestinal tract) is lower than normal. Among reports of animal

experiments, it also has been stated that ever since water containing selenium has been fed to sheep in New Zealand, incidence of gastrointestinal cancer among herds of sheep has been reduced to almost zero. Moreover, there have also been reports concerning the cancer-inhibiting action of Vitamin C. It is very possible that Vitamin A can prevent people from suffering some major cancerous diseases. Some people also believe that eating and drinking foods and beverages of a high fiber content may have an effect of preventing colon cancer, while a high content of fat in foods is closely related to the increase of incidence of colon cancer in various countries. Eating less meat and fat and more fiber-containing carbohydrates such as grains, vegetables, fruits, and beans may perhaps have the effect of preventing colon cancer.

The occurrence of cancer is closely related to the environment, eating, and drinking; therefore, effective control of the carcinogenic factors of the environment is very important. The environment is divided into the primary environment and the secondary environment. The condition of occurrence of cancer is often related to such geographical factors as water, soil, geology, terrain, and weather of the primary environment. While the quantitative and qualitative difference of trace elements in the geological factor (the soil parent material) and the difference in the climatic condition may be the major cause of the difference in regional distribution of cancer, the carcinogenesis of the secondary environment is often induced by environmental pollution. As many sciences are combined for cancer research, with mankind's active utilization of nature and improvement of nature to prevent environmental pollution, cancer, the "incurable disease," currently regarded as a threat to the health of humans, will definitely be conquered.

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CSO: 5000

SRI LANKA

BRIEFS

CHOLERA VACCINE--Bentota--Over 1,000 people in the Bentota-Indurawa area including tourists and visitors at the tourist hotels have been given the anti-cholera vaccine to combat the outbreak of the disease. Mrs M. L. Wijesekera along with Mr A. Uralagamage administered the vaccine. [Text] [Rangoon THE WORKING PEOPLE'S DAILY in English 19 Feb 81 p 9]

CSO: 5400

TOTAL OF \$6 MILLION TO BE INVESTED IN SOLID WASTE DISPOSAL PROGRAM

Port-of-Spain TRINIDAD GUARDIAN in English 19 Mar 81 p 1

[Text] Government is providing \$6 million for a programme to recycle solid waste.

This was revealed by Senator Selwyn Richardson, Attorney General, while winding up debate on the Anti Litter Bill in the Senate on Tuesday.

He was replying to a suggestion from Opposition Senator John Humphrey that Government should consider establishing a modern plant for the recycling of waste.

Senator Richardson said recycling of waste was being dealt with by the Solid Waste Management Company and \$6 million had been provided for the consideration and implementation of the recycling process. [as published]

Self-Supporting

In the meantime, he said, no incineration would take place except in respect of international waste coming from ships and airplanes.

The Attorney General agreed with independent Senator Michael de la Bastide that there should be public education programmes and he was hopeful that the public would be more aware of their responsibility, particularly in relation to the throwing of bottles and litter from public vehicles.

Earlier, Senator Humphrey told the Senate that a modern plant for the recycling of waste could be self-supporting and that the value of raw material derived from recycling waste could more than pay for the plant.

Senator Dr. Michael Beaubrun (Independent) said that for some time Port-of-Spain had the unenviable reputation of being the most dirty city in the Caribbean.

The powers contained in the Bill would be of no use, he said, unless they were enforced.

Dr. Beaubrun referred to the mental health laws for which he said a lot of the appurtenances needed to enforce them were not provided.

One of the provisions of the mental health laws was to pick up the mentally ill, he said, and yet the Port-of-Spain mental health officers did not have an ambulance at their disposal except on Fridays.

The success in cleaning the streets after Carnival, he said, showed what good management of the Solid Waste Management Company could do.

"We also need new habits," he said, "but it would take us some time."

CSO: 5400

EDITORIAL SUPPORTS STRONG ANTI-LITTER LAWS, ENFORCEMENT

Port-of-Spain TRINIDAD GUARDIAN in English 19 Mar 81 p 8

[Text] Provision of stiff fines and even imprisonment for littering included in the amendments to the Litter Act should certainly serve to deter litter bugs and reduce the constant mindless indiscriminate disposal of garbage that defaces so much of our beautiful country.

We hope that those vested with the power to enforce the new anti-litter laws would do so vigorously and impartially.

It is a pity that we have to resort to the "big stick" to solve such a problem but we feel this is more than justified. Those of us who are impressed with the cleanliness of other countries must also realise that their anti-litter laws are just as severe and strictly enforced.

National pride does not produce the deterrent that it should. In fact, we are disturbed by the growing malaise among our citizens, an attitude of unconcern which would allow matters to go to pot unless one's personal interest and welfare are involved.

Awareness of the basic rules of sanitation and hygiene appears to be lacking and it is not uncommon to see people toss into neighbouring traces, patches of open ground, drains, water courses, streams and rivers and everywhere else their domestic or individual rubbish. [as published]

As Senator George Bowrin observed, the entire country is almost defaced with a revolting accumulation of litter.

But, as a number of Senators pointed out during Tuesday's debate, stricter laws and enforcement should not be the only approach to the litter problem.

We fully endorse their call for parallel programmes of public education and motivation, the placement of proper receptacles, improved and intensified scavenging services. The suggestion of Senator Humphrey for the establishment of a modern plant for the recycling of waste is one that should also be positively pursued.

TRINIDAD AND TOBAGO

BRIEFS

GASTROENTERITIS CRISIS--San Fernando: The number of gastro enteritis cases in County Victoria is causing concern among members of Victoria County Council. Councillor Latchman Seecharan, lone ULP member, observing the number of cases, as recorded by the medical officer of health during the past three months, has brought the matter to the attention of the Minister of Health and Local Government, Rep. Kamaluddin Mohammed. "The situation has now reached crisis proportions, in respect of this gastroenteritis," Mr. Seecharan told the Minister by letter dated March 10, and he called on him to take remedial and corrective measures. Mr. Seecharan pointed out that at the end of December, 1980, there were 110 cases and at the end of January, 1981, 187. [Text] [Port-of-Spain TRINIDAD GUARDIAN in English 12 Mar 81 p 6]

CSO: 5400

BRIEFS

MENINGITIS OUTBREAK--Ouagadougou, March 29 (AFP)--An outbreak of meningitis has been recorded in the north of Upper Volta, with numerous deaths, according to reports here. The minister of information, Lieutenant-Colonel Charles Bambara, [word indistinct] the disease in the west African country in his report yesterday on Friday's cabinet meeting of the military government. Lt.-Col. Bambara said that a vaccination campaign for those from three months to 20 years of age was being set in motion. Although the minister said there was no need for alarm, medical sources at Ouagadougou's Central Hospital said many meningitis deaths had been recorded, notably in the arid north. [Text] [AB302130 Paris AFP in English 1207 GMT 29 Mar 81]

CSO: 5400

LA PAZ BEGINS ANTIRABIES CAMPAIGN

La Paz PRESENCIA in Spanish 5 Mar 81 p 8

[Text] The La Paz Sanitary Unit has vaccinated 26,875 dogs against rabies at the conclusion of the 10th week of a campaign aimed at immunizing all the dogs in the city, it has been reported officially.

The antirabies campaign began on 16 December and will end on 13 March. The Sanitary Unit organized brigades of technicians who set up vaccination stations in the principal areas of the city of La Paz.

From 2 to 16 March, vaccination stations will operate in the following locations: Plaza Franz Tamayo (across from the Methodist Hospital), Plaza Obrajes, Seguencoma (Police Academy), "N" microbus stop (Ipravi), Plaza Humboldt (Calacoto bridge) and Alto Florida.

Dr Guido Sagarnaga, director of the Sanitary Unit, reported at the end of the 10th week of the program that immunizations were given at 72 vaccination stations operating in 12 sectors of the principal areas of the city. The evaluation was made only 2 weeks before the end of the campaign.

When the campaign was begun, the Sanitary Unit reported that there were 96,000 dogs in La Paz "with almost no protection" against rabies. The vaccination campaign seeks to immunize some 76,000 animals (dogs, cats and monkeys) considered to be the chief carriers of rabies.

At the same time, the Sanitary Unit has carried on a program of education and recommendations to the public to prevent rabies, which is fatal if not properly treated. Despite these efforts, Many dog owners have not taken advantage of the campaign to immunize their animals.

Dr Sagarnaga emphasized the importance of the campaign in reducing the incidence of rabies, and he again called on people to bring their animals to the vaccination stations. The vaccine costs only a "nominal" 10 Bolivian pesos and immunizes the animal for 1 year only. Every dog 3 months old and older should be vaccinated against rabies. The vaccination stations will be open from 0900 to 1600 hours and will give certificates of vaccination to all those who have their animals vaccinated.

8735

CSO: 5400

BRIEFS

RURAL ANTIRABIES CAMPAIGN--Cochabamba, 6 Mar--The Sanitary Unit's Epidemiology Division will begin this week an antirabies campaign in the rural area of Cochabamba to vaccinate at least 5,500 dogs and stop the spread of rabies in rural communities. Teddy Penafiel said that in the city, 26,000 animals--or 70 percent of all dogs in the capital--have been vaccinated. The campaign was considered successful since it reached much of the suburban areas and barrios surrounding Cochabamba. He also mentioned that the epidemiology section of the Sanitary Unit will send out units and brigades to vaccinate the 5,500 animals estimated to be in the provinces near this city. [Text] [La Paz HOY in Spanish 7 Mar 81 p 5] 8735

CSO: 5400

MYSTERIOUS DISEASE ATTACKS BALI CATTLE

Jakarta SINAR HARAPAN in Indonesian 7 Feb 81 p 8

[Article by Dr Chairul Arifin and Dr Endang Pudipraptanti of the Indonesian Veterinarians Association: "Cause of 'Jembrana Disease' Is Not Yet Known"]

[Excerpts] About 15 years ago many cattle owned by smallholders died. Epidemics that killed 27,453 cattle (according to data from the Veterinary Medicine Directorate) followed one after the other for 3 years. This astonished both the cattle breeders and the government.

From the symptoms that developed and the death rate, this was viewed as an unusual disease. Since the cattle breeders and people in the area had never seen such a disease, they called it the "Jembrana disease," named for the place in which it first appeared.

A number of years later, in 1971, when cases dropped off in Jembrana, a disease with the same symptoms and character appeared in the neighboring regency, Tabana. Cattle breeders there called it the "Tabana disease" after the area in which it appeared. In 1972 almost all of Dewata Island, a well-known tourist area in Indonesia, was infected with the disease. Only a few subdistricts escaped.

Many Indonesian veterinarians, moreover, veterinary experts from overseas, said the symptoms of the disease were rather odd since the disease had not been encountered before.

Bali cows and cows from Bali stock (Rambon Bali) were affected. Some experts said caribou could also be attacked by the disease. It is a chronic disease but can also be acute.

Usually when the cattle become ill, general symptoms appear first as they do in humans. There is fever accompanied by loss of appetite or failure to eat at all. The cattle appear listless and they have a very high temperature. They have diarrhea, and the feces are mixed with blood and are brownish red in color. Another clearly visible symptom is swelling of what are called the *lands*.

Thick saliva drools from the mouth, and if we open the animal's mouth, we see pocks on the mucus membrane of the mouth, lips, gums, and cheeks.

What is called "bloody sweat" is a peculiar symptom of this disease. Veterinarians have estimated that 70 percent of the afflicted cattle showed symptoms of bloody sweat.

Pregnant cattle attacked by the disease will abort. There is also the risk that the hair on the head of a diseased animal will become coarse, will have no shine, and stands up.

Sometimes the cattle are lame. The disease spreads very rapidly. Spontaneous cure can be expected.

To date it is not clear how the disease spreads since it has only recently appeared in our homeland. To determine how the disease is spread, the Animal Husbandry Directorate General formed a team in 1971 for researching animal diseases in Bali. It consisted of members of the Surabaya Veterinary Virology Institute, the Bogor Animal Disease Research Institute, and the Bogor Agriculture Institute Veterinary Medicine Faculty.

Results of the team's investigation show that the Jembrana or Tabana disease is caused by a micro-organism called rickettsia.

Although it has been possible to determine the agent causing the disease, it is still not absolutely clear how it is spread. It is conjectured that the disease is spread among cattle by a tick (a blood sucking member of the louse family). The tick moves from one cow to another. Apparently, however, not all cases of the disease are due to ticks. How the disease really is spread remains a puzzle to this day.

6804

CSO: 5400

BRIEFS

PARVO VIRUS DISEASE--An emergency shipment of 15,000 units of vaccine to counter canine Parvo-Virus disease, was expected to arrive in the island yesterday, for distribution through the Ministry of Agriculture. The order, valued at \$57,634, was placed on behalf of the Ministry of Agriculture by the State Trading Corporation on March 6, following the discovery of a severe outbreak of the disease here. The order is comprised of 10,000 units of Galaxy 6, and 5,000 units of Par Vac vaccine, supplied from Salsbury Laboratories, Iowa, USA. The vaccines are similar to those previously sold through the Jamaica Livestock Association, but the present shipment is being supplied in double strength units. Following the discovery of the disease here, which claimed the lives of a large number of young dogs, emergency measures were taken to ensure an early supply of the vaccine. Yesterday's shipment was the result of joint action by the State Trading Corporation, the Bank of Jamaica, and the Trade Administrator's Department. Canine Parvo-Virus disease is a frequently fatal disease to young dogs, and the vaccine is intended to protect healthy dogs against the disease. It is understood that there is as yet no known treatment for animals which have already contracted the disease. As a result of the outbreak of the disease here, the Government of the Cayman Islands this week placed a ban on all movement of animals from Jamaica to Cayman. [Text] [Kingston THE DAILY GLEANER in English 20 Mar 81 p 1]

CSO: 3400

BRIEFS

SWINE FEVER--Detailed investigations have revealed that African Swine Fever is widespread and extremely common in central and northern SWA. Further work has shown for the first time that actual live virus is present in the blood of very young warthog in sufficient quantity to infest the carrier, the eyeless tampan, which lives in warthog burrows. In a press release issued by the Department of Veterinary Services in Windhoek this week, the Director of Veterinary Services, Dr J. Bergmann, says that existing strict control measures are fully justified. He told the ADVERTISER that these measures include the shooting of any infested warthog or pig followed by the animal's total destruction by fire. Dr Bergman explained, however, that swine fever was not transmittable to humans either through contact with live swine, or from consuming swine meat. It was nevertheless necessary to destroy infested animals in order to protect others which may become infected by the virus. [Text] [Windhoek THE WINDHOEK ADVERTISER in English 24 Mar 81 p 1]

CSO: 5400

BRIEFS

RABIES VACCINATION ON SVALBARD--(NORSK TELEGRAMBYRA)--All dogs and cats in the Norwegian settlement on Svalbard will also be vaccinated against rabies this year, states Harald Bach-Gansmo, assistant director in the Ministry of Agriculture, in a conversation with NTB (NORSK TELEGRAMBYRA). Veterinary inspector Einar Ikdahl of the ministry's Veterinary Section will travel to Svalbard on 6 May in order to arrange the vaccinations. [Text] [Oslo AFTENPOSTEN in Norwegian 2 Apr 81 p 5]

CSO: 5400

INCIDENCE OF CATTLE DISEASE IN MONZE

Lusaka DAILY MAIL in English 20 Mar 81 p 3

[Text]

SOUTHERN Province veterinary officers yesterday rushed to Monze where the tick-borne disease continues to kill thousands of cattle.

The department also imposed a restriction on movement of all livestock in the affected areas. But last week, it was reported that officers were unable to contain the situation because of floods in the district.

And recently, Belasubramaniam disclosed that at least 20 per cent of calves born of peasant's cattle in the province died annually partly because of lack of drugs.

The veterinary officer told the Southern Province Land Commission that out of the total 900,000 cattle population in the province, 150,000 heads were owned by peasants who did not have access to good grazing grounds and did not manage their cattle properly.

He said his department needed more funds to

buy more drugs and increase the number of dip tanks from 35 to over 100 if the high mortality rate was to be reduced.

Department of Veterinary at Choma said provincial officer, Dr Namasivayan Belasubramaniam and senior livestock officer, Mr Isaac Mwenya had gone to Monze West following reports of villagers that more cattle were dying.

Last month, it was reported that more than 2,000 cattle had died from corridor, heart water, red water and tick-borne diseases in the area.

Following a protest march by villagers calling on the Government to help them, the veterinary department rushed a team of workers and drugs to the area.

SPREAD OF CATTLE DISEASE, PREVENTIVE MEASURES REPORTED

Lusaka DAILY MAIL in English 25 Mar 81 p 7

[Text]

THERE is little hope of any early breakthrough in the battle to control one of Zambia's most serious livestock diseases — *theileriosis*.

This was the main conclusion of last week's public lecture and discussion at the headquarters of the National Council for Scientific Research. Dr A.E. Oteng, the lecturer, pointed out that the main tick which is responsible for spreading the disease, *rhhiplocephalus appendiculatus* (or brown ear tick), is found throughout the country.

Fortunately, deaths from the disease have so far only occurred in Northern, Eastern and Southern provinces but with the ticks present there is a serious risk of the disease spreading. Only last month it was reported that 2,000 head of cattle had died from the disease in Monze.

But it also appears that the disease has spread as far as Choma. *Theileriosis* is now considered the correct name for this complex disease which has in the past been confusingly called both east coast fever and east coast disease. Farmers and extension staff would be happy if in future the veterinarians could coin more pronounceable names for the diseases they discover.

Dr Oteng is a Ugandan who had to leave his post as director of Veterinary Control during the Amin regime. He has been researching in Zambia since 1978 mainly in the Chadiza district of Eastern Province. This is in an area where *theileriosis* has been an annual threat for many years.

To find out more about the disease, Dr Oteng and a team led by the Chadiza livestock officer visited the area every month to collect samples. Ticks were collected from the ground and from cattle while blood tests were carried out to see how many animals were infected. Over 50 per cent of cattle were found to be carrying the organisms and contrary to expectations even calves of two months old were also infected.

One of Dr Oteng's main recommendations to farmers in Chadiza is that they should be extremely careful about dipping their cattle during the months of September to November. This is a time when dipping may be neglected due to the pressure of cultivation work.

Although it is a time when people thought ticks were not such a great problem it is in fact a time when cattle are covered with small immature ticks. This is because it is necessary for the tick to climb on a living animal if it is to survive the long dry season.

Dipping at this time can do a great deal to reduce the more obvious problem of tick infestations after the rains start. The most serious period for infection with theileriosis is from December to March. Cows that become sick with the disease normally die in about three weeks from the day of infection. However, Dr Oteng found that sometimes the disease follows a much slower course with the cow taking two to three months to die.

Dr R. Hirst, the Cooper Zambia veterinarian, who took the chair at the lecture, reported rather pessimistically on the outcome of a recent meeting in Nairobi. This brought together research workers from many countries which are studying theileriosis.

The main conclusion he came to was that the disease was much more complex than people had originally thought. After years of research no one is quite certain which type of theileriosis is transmitted by which tick. Reports in the Press of a vaccine against tick-borne diseases being developed in Compton, England apparently concerned only the disease redwater. Theileriosis, because of its complexity, is likely to be a much harder nut to crack.

PROGRAM PLANNED AGAINST ROOT BORER THREAT TO SUGAR CANE

Bridgetown ADVOCATE-NEWS in English 4 Mar 81 p 10

[Article by Trevor Yearwood]

[Excerpts] Barbados is planning to step up the war against pests gnawing away at its lucrative sugar cane industry.

After a reasonably successful chemical attack, more attention is being focussed on the possibility of improving parasites and predators to wipe out the root borer population.

Barbados is hoping for a collection of tiny killers from countries including Pakistan, India and some African states which grow sugar cane and face similar pests problems, said Muhammad Mumir Alam, an entomologist at the privately-owned Sugar Technology Research Unit which spearheads the pest control programme.

"We are hoping to get some insects and predators from them", he said. "It will be on an exchange basis, with us sending them one specie and receiving another."

There is a lot of concern here about destruction of canes in at least five parishes, by the root borer. Mr. Alam however, said the outbreak had not reached alarming proportions this year.

"At this time, I don't see it as being very serious this year," he said. "The insect population has gone very low. I am quite happy with the way things have worked out."

He added: "This problem has been with us for a long time--90 or 100 years. In the mid-1970s there was a big outbreak, but now the root borer population is at a low level. We are, of course, keeping a close watch on these things. We are doing quite a lot of work on biological and chemical control."

But adding predators to the soil to destroy the borers' eggs is only one of two main methods of attack. The other is chemical warfare, but in some cases this is less productive, according to Mr. Alam.

There are at least three types of borer, one capable of penetrating a foot into the soil and attacking the sugar canes' main roots. "This one is difficult to control by chemicals, because most of the modern chemicals have a very low mobility in the soil," Alam explained.

The best way round the problem seemed to be ploughing the field, placing chemicals in the furrows and then replanting. In such cases, Alam said, the field could be relatively free of the root borer for three years.

Barbados is looking towards African countries, India and Pakistan for wasps, beetles and bugs which could kill the eggs, larvae or pupae of the root borer, Mr. Alam said.

CSO: 5400

COFFEE RUST SPREAD PROMPTS CONTROL PROGRAM

La Paz NOY in Spanish 25 Feb 81 p 6

[Text] A training course for technicians on control of coffee rust disease will be presented by an expert from the UN Food and Agriculture Organization (FAO) program in Coroico, according to an announcement by the Bolivian Institute of Agricultural and Livestock Technology (IBTA).

The visiting technician is agronomic engineer Jose Braz Matiello, chief of the Department of Technological Research of the Brazilian Coffee Institute, who has been contracted by the FAO to speak in Bolivia and to offer his services as a consultant to the agencies in charge of implementing the aforementioned disease control program.

Technology

According to the IBTA report, Matiello had indicated that the technological change to be made here is related to agricultural research and extension as the basis of maintaining any program for controlling rust disease. It is also linked to the training of personnel in rust control methods, as well as the adaptation of crops.

Experience Cited

The visitor also said that in Brazil they have learned to coexist with the disease for many years, since it is impossible to eradicate it, and it has spread throughout the country.

This coexistence is maintained by two basic means of control: chemicals and the substitution of rust-resistant coffee plants. The cost of this activity is charged to production, like so many others, such as consumer expenditures, seeds and other items; thus it is no longer a problem of eradication, but one of confronting the disease.

Bolivian Situation

It is reported that in a visit to Yungas de la Paz Matiello observed that rust disease is very widespread, and therefore he predicts a drop in the regular volumes of coffee production.

At the same time he said that control of rust on the traditional plantations is impractical and not technically viable because those plantations are closed and do not permit chemical control.

To achieve some recovery there must be some pruning and, in their case, some paths must be opened up where sprayers may circulate.

He said the Yungas area is very susceptible to the disease in question because of its climate, the humidity and other characteristics.

He advised, finally, the establishment of laboratories for phytopathological studies and entomological control, where a study also may be made of the incidence of another disease caused by nematodes, which could be very severe in the near future.

8735

CSO: 5400

LOCAL TOBACCO PLOTS SUFFER OUTBREAK OF BLUE MOLD

Havana GRANMA in Spanish 15 Jan 81 p 4

[Article by Fernando Davalos: "Three Thousand Tobacco Plantings Throughout the Country Affected by Blue Mold"]

[Text] Despite the damage suffered as a result of hurricane Janet and the tropical depression which followed it, resulting in the loss of some 105 caballerias of seed and some 250 caballerias of plantings, setting the tobacco season back more than 40 days, it can be said that this undertaking is continuing to develop positively.

The efforts of all the provinces to minimize the delays and losses has effectively limited the serious damage suffered. For this reason, the threat of blue mold should be rapidly and radically eliminated. All the conditions necessary for this have been created.

About 3,000 plantings affected by blue mold have been located in the last few hours by the plant health authorities in the country, posing a particularly serious potential danger to the present tobacco harvest, the highest planned in history and the first since the great damage done by this terrible fungus disease to the tobacco plantings throughout the country last year.

Peronospora tabacina (the scientific name for blue mold), a disease which appears on the front and back of the tobacco plant leaves as grayish blue patches, becoming systemic and destroying whole plantings in 72 hours, is now the focus of a detailed and carefully thought out program of control in Cuba, a program which to date has freed the majority of the tobacco growing areas, both state and private, of this disease.

However, the existence of small private plots (the so-called "fumeros" or self-supply areas) in the gardens of rural homes and even in settled areas, which it has not been possible to provide with plant health protection services due to their number and scattered location, provides a propitious medium for the resurgence of the disease.

The general plant health office at the Ministry of Agriculture has informed GRANMA that 2,873 focuses of blue mold have been found in as many private plots, out of a total of 4,183 registered in the 12 provinces of the country (according to a report dated 13 January 1981).

The finding of blue mold on these "free" plots led to rapid quarantine measures on the part of technicians at the territorial plant protection stations and the local agricultural bodies, involving the immediate and total destruction of the entire crop and the isolation of the outbreak.

This requires a considerable expenditure of resources, some very costly products paid for in foreign exchange, and what is worse, there is the undeniable threat these contaminated sites pose to the economically important plantings of the nation, owned by small farmers (the majority), cooperatives and the state.

Legal steps have already been taken, with resolutions categorically prohibiting development and cultivation of these "private plots" by the people's government authorities in Pinar del Rio, Havana, Villa Clara, Sancti Spiritus, Las Tunas, Holguin and Granma. All of these measures are making a valuable contribution to safeguarding the current tobacco season against blue mold.

The threat of the private plot as a source of the dissemination of blue mold lies in the fact that the time between the appearance of the disease and its detection and destruction allows the distribution of tens of millions of contaminating spores (the means by which blue mold reproduces) by the wind.

Provinces such as Pinar del Rio, where "fumeros" were categorically prohibited in early and timely fashion, have none of these domestic plots today, with or without blue mold, a further guarantee for the formidable tobacco season which is developing.

The eastern provinces with tobacco plantations, such as Holguin and Granma, have outbreaks "imported" from the "meadows" located in the Sierra Maestra zones, mainly located in the province of Santiago de Cuba.

It should be recalled that because of the nature of the wind systems in the eastern part of the country, there is an area in which wind currents converge on the central plains (the so-called eastern "convection spine," according to geographer Fernando Boytel), coming in part from the mountain zones (gravitational wind) or the hilly areas (woodland breezes).

This situation explains the seeming contradiction in the fact that the tobacco areas on the eastern plains still have private plots and some larger plantations with blue mold, despite the fact that the lowest indices in the entire country of conditions favorable for the development of the disease were recorded in these places in November and December.

The index of ecological conditions propitious for blue mold--another tool of the national plant health protection service--is provided by the national weather service and is computed electronically by the MINAG (Ministry of Agriculture). In the two months mentioned, the eastern mountainous zones were shown as having the most intensive such indices of anywhere in the country, propitious for the upsurge of the disease.

The reports of the general plant health office also indicate that centers of blue mold were also found in some legal private and state plantings, but in these cases control can be effected more efficiently. This office reported that these small centers located in controlled areas were due to violations of the prevention program, and they have caused insignificant losses.

The potential danger lies in the "fumeros."

It is the duty of the local authorities to intensify the struggle to eliminate them, just as the nation expects those who have cultivated them to focus their greatest cooperation on eliminating them once and for all for the good of the economy.

The National Campaign to Prevent Blue Mold

The country carried out a very urgent research program in order to determine the products best suited to the control of the disease and to select the most appropriate methods of application. Ridomil, a Swiss product, and Zineb, Bulgarian or Soviet, are the chemical products most effective against blue mold. Both have been purchased in sufficient quantity.

A vast campaign of training for the peasants and for all of the personnel participating in tobacco cultivation was designed in order to carry forward this program.

New and more productive and resistant tobacco varieties, all developed at the national tobacco genetic improvement centers, were introduced.

The use of new agrotechnical practices was launched at the seed nurseries (covering a total of some 300 caballerias in more than 1,200 units) and plantations, expected to reach 5,000 caballerias.

Material and technical reinforcements were provided for tobacco production. More tractors, machines, material supplies and human resources were allocated. A small "army" of 400 technicians was organized to assist the private harvesters and farm workers throughout the country.

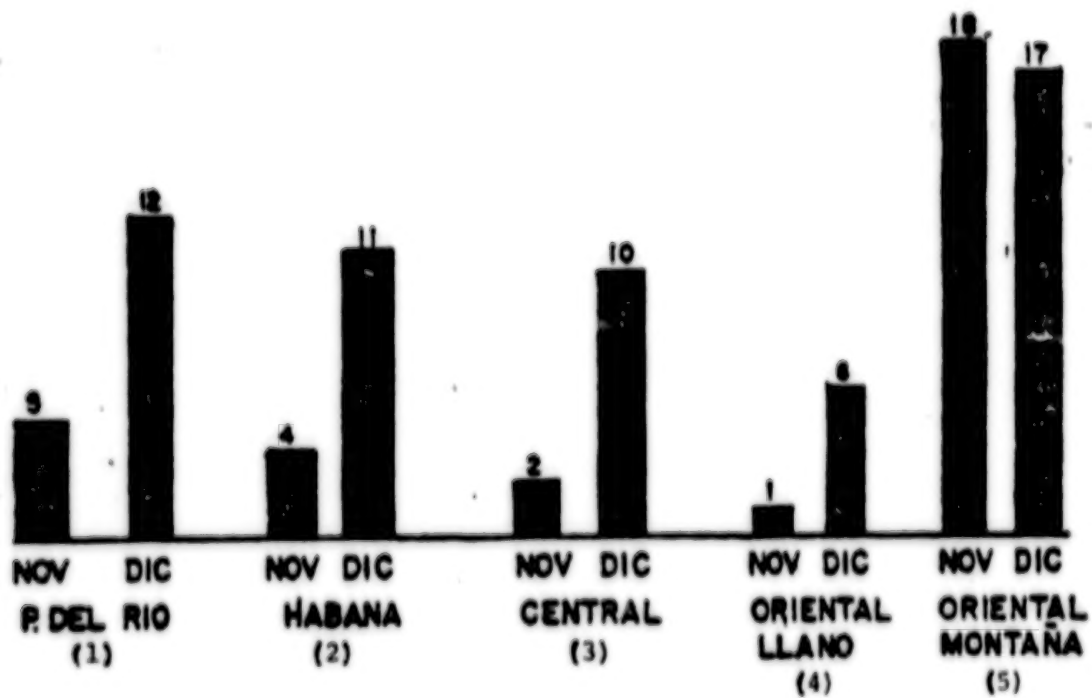
An overall system of plant protection for tobacco--and not for just blue mold alone--was organized, with procedures for reporting (warning) and prognosis, including the use of electronic computers to alert provincial agricultural authorities to the development of weather conditions favorable to the disease.

Private Plots Located, with Incidence of Blue Mold

Province	No of "Fumeros"	No Affected by Blue Mold
Pinar del Rio	--	--
Havana	362	108
Matanzas	160	58
Cienfuegos	164	42
Villa Clara	241	153
Sancti Spiritus	201	146
Ciego de Avila	62	46
Camaguey	981	936
Las Tunas	127	84
Holguin	132	61
Granma	992	777
Santiago de Cuba	452	325
Guantanamo	300	137
Isle of Youth	1	--
TOTAL	4,183	2,873

Note: Report dated 13 January 1981

Frequency of Conditions Favorable to Blue Mold



Key:

1. November, December; Pinar del Rio
2. November, December; Havana
3. November, December; Central Plains
4. November, December; Eastern Plains
5. November, December; Eastern Mountains

5157

CSO: 5400

BANANA LEAF SPOT SITUATION WORSENS; GOVERNMENT ASSAILED

Kingston THE DAILY GLEANER in English 12 Mar 81 p 1

[Text] The All Island Banana Growers' Association has expressed grave concern about continuing poor Leaf Spot Disease control, and has stated that some cultivations under the post Hurricane Allen resuscitation programme have been "completely wiped out!"

In a letter to the Acting General Manager of the Banana Company of Jamaica, Mr. O. F. McRae, the Association expressed "concern at the deteriorating condition of banana cultivations, due to the lack of proper Leaf Spot control, especially in the St. Mary area."

It said that in spite of assurances that measures had been instituted to effect improvement, the situation had worsened, and growers had not only suffered financial losses, "but have also seen the source of their income disappear."

However, the Banana Company of Jamaica acting general manager, Mr. McRae told the GLEANER yesterday that the situation had been caused not by negligence, but by unusual wind conditions which have grounded the spray planes for nearly six weeks now.

He said that Crop Culture Limited, the spray contractors, had reported that not since 1958 when they started operations have they encountered such a sustained adverse wind condition, especially in St. Mary and St. James.

Mr. McRae said the number of operational aircraft was more than adequate, and all other materials were available, but the work could not go on as long as the wind conditions persist.

However, he said, the Banana Company of Jamaica has been building up its ground spraying capability and now had increased the number of units in St. Mary from four to 12; and those in St. James, from one to 25.

Mr. McRae said that in the Maroon Town area of St. James about 2,400 acres of heavily infected banana had been identified and this had been divided into 100-acre blocks and assigned to ground sprayers.

He said the current problems would not have been so grave had there been a proper control programme last year. But, the lack of spare parts and materials had led to a serious fall-off in the programme, hence the carryover infection to this year was unusually heavy.

He also said that a move was being made to step up the spraying cycle from 17 to 25-day cycles to 14-day cycles.

CSO: 5400

NORWAY

BRIEFS

CAMPAIGN AGAINST BARK BEETLES--The war against bark beetles in the forest is continuing, and altogether will cost something over 35 million kroner. The Storting Agricultural Committee is unanimously agreed on a series of various proposals to reduce losses in the forest this year. Aside from ones dealing with administration, these include registering, research, granting of funds for summer cutting and building of forest roads. Another proposal would allow the purchase of technical equipment for use in rough and difficult terrain. [Text] [Oslo AFTENPOSTEN in Norwegian 1 Apr 81 p 40]

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